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Eighty-six Negro and Mexican-American children were divided into experimental and control groups in a study designed to learn the effects of an 8-week summer Head Start program on the achievement motive of these children. The study was based on McClelland's theory of achievement motive and the models of Atkinson and Aronson. Children were pretested and posttested with the Aronson and Level of Aspiration Tests. Data concerning teachers was collected on the Observer's Rating Form. Mothers filled in the Winterbottom Questionnaire. Both ethnic groups of children made gains in achievement motive. The total Head Start experience was apparently responsible for the change in subjects towards motive to avoid failure. Head Start reinforcement practices were more structured and systematic than is common to lower class parents' practices. Type of reinforcement is associated with the development of the achievement motive. Because teacher aides spend much time with the children, a workshop on the nature and effects of reinforcement is recommended as part of any future aide training program. Facsimiles of the Spanish and English questionnaire forms and the rating scale are in the appendixes. (MS)

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FINAL REPORT ON
HEAD START EVALUATION AND RESEARCH: 1967-68

(Contract No. OEO 4202)

TO

THE OFFICE OF ECONOMIC OPPORTUNITY

By

The Staff and Study Directors

CHILD DEVELOPMENT EVALUATION AND RESEARCH CENTER
John Pierce-Jones, Ph.D., Director
The University of Texas at Austin

June, 1968

SECTION II: ACHIEVEMENT MOTIVATION AND PATTERNS OF REINFORCEMENT IN HEAD START CHILDREN

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Renato Espinosa

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R. E.

The University of Texas at Austin
May 2, 1968

ABSTRACT

This research investigated the effect of the Head Start Program on the development of the Achievement Motive. Two independent tests were used in a pre-post test design. It was found that there is a significant gain over time in the Achievement Motive of Negro and Mexican-American children. This change is significantly greater than the change expected to occur by the passage of time alone.

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PART I

BACKGROUND

The present project was stimulated by the theoretical formulations of McClelland, Atkinson, Feather, and their associates, and also by the obvious importance of their theories for problems of achievement, school performance, and later general adaptation to economic and social life that are crucial for the population involved in Head Start.

Central to the research is the notion that the Achievement Motive is acquired in early childhood as a result of the patterns of reinforcement used by parents and significant adults. Winterbottom (1958) conducted a study based on McClelland's (1953) notions and found that training in independence and mastery was highly correlated with the Achievement Motive as measured by verbally elicited achievement imagery. She found stable patterns of demands and restrictions in training for independency and mastery in the ages when these behaviors were expected to be established for mothers of High and Low nAch Groups. She also found that the mother's emotional reactions to success and failure in these behaviors were characteristically different for High and Low nAch groups.

Most of the research in Need Achievement, performance, and risk-taking behavior has been conducted using college student populations. However, some studies have dealt with children from five to nine years of age. Significant in this research with younger children are McClelland's (1958) study on risk-taking behavior with five and nine year olds and Winterbottom's (1958) study of training in independence and mastery. These investigators used, however, subjects from midwestern, white, middle-class groups. Thus, our research differs in extending and validating (or modifying) their findings as they apply to a "culturally deprived" population of different ethnic and cultural extraction.

What is central, from our point of view, is the fact that it might be possible that the social forces and controls that McClelland assumes to be responsible for the development of the Achievement Motive are not present in the same form in our population. There is little or no information about the types of interactions between Negro and Mexican-American parents and their sons. In Hess and Shipman's (1965) words, " . . . one of the features of the behavior of the working-class mothers and children is a tendency to act without taking sufficient time for reflection and planning. In a sense, one might call this impulsive behavior--not by acting out forbidden impulses, but in a type of activity in which a particular act seems not to be related to the act that preceded it or to its consequences. In this sense it lacks meaning; it is not sufficiently related to the context in which it occurs, to the motivations of the participants or to the goals of the task." Furthermore, they reason and interpret this type of interaction found in their research as follows: "the objective of our study is to discover how teaching styles of the mothers induce and shape learning styles and information-processing strategies in the children. The picture that emerges is that the meaning of deprivation is a deprivation of meaning--a cognitive environment in which behavior is controlled by status rules rather than attention to the individual characteristics of a specific situation and one in which behavior is not mediated by verbal cues or by the teaching that relates events to one another and the present to the future. This environment produces a child who relates to authority rather than to rationale, who, although often compliant, is not reflective in his behavior, and for whom the consequences of an act are largely considered in terms of immediate punishment or reward rather than future effects and long range goals."

If we assume this to be true, and the evidence offered by Hess and Shipman to be convincing, then the possible impact of Head Start is realized. Those children who have, for the most part, been subjected to unsystematic and perhaps chaotic reinforcement sequences will find their Head Start experience highly structured and systematic. We can assume then, that, if the Achievement Motive has not yet developed, the eight weeks of their summer experience will be decisive in shaping their achievement tendencies. If the Achievement Motive is already in a process of development, then important changes will take place in the direction of this development.

PART II

THE PROBLEM AND HYPOTHESIS

The present project proposes to test McClelland's (1953) notions about the development of the Achievement Motive in five and six year old Negro and Mexican-American boys participating in the Head Start Program.

According to McClelland (1953), in children between five and nine years of age, the Achievement Motive is in the process of development. The main factor in this development is the type of reinforcement received by the child.

Earlier reported findings by Hess and Shipman (1965) lead us to assume that the reinforcement received by subjects prior to their enrollment in Head Start was in general not applied in a direction consistent with what is needed for the development of the Achievement Motive. It is for this reason that we expect that the change from the home to the Head Start environment will have an important positive effect in accelerating its growth.

The nature of the reinforcement experienced in the home is not assumed to be completely asystematic.

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Using the Expressive Method for Measuring Need for Achievement (Aronson Test) developed by Aronson (1958) as the measuring instrument, we expect that

Hypothesis I. "Our subjects will differ in their Achievement Motive as measured by the Aronson Test at pretest time."

The Head Start Program, because of the structured experiences it provides, will be instrumental in producing a gain in Achievement Motive beyond that expected in the absence of this Program.

Hypothesis II. "There will be an overall increase in Achievement Motive between pre-and posttest as measured by the Aronson Test."

The theory of Achievement Motive development of McClelland (1953) states that the amount and type of reinforcement received by the child will affect the development of the Achievement Motive.

Hypothesis III. "The children whose teachers have been instructed to place special emphasis on

> reinforcing and praising achievement-related behavior (Experimental Condition) will show a greater gain in the Aronson Test scores than the children whose teachers have not been so instructed (Control Condition)."

The reasoning that leads us to Hypothesis III assumes that the variable responsible for the gain in Achievement score is the amount and frequency of reinforcement. It is likely that the measured difference between High and Low Achievement Groups at pretest time is indicative of two different stages in the development of the Achievement Motive. Furthermore, Atkinson (1957) has enlarged the theory proposing that another motive, the Motive to Avoid Failure, has a similar, parallel development to the Motive to Achieve Success (equivalent to the former Achievement Motive). Following this model, it is possible to assume that a low score on the Aronson Test is indicative of a relatively weak Motive to Achieve Success and a stronger Motive to Avoid Failure. Following this model, it is expected that

Hypothesis IV. "The Low Achievement Group (i.e., high on the Motive to Avoid Failure) will show a greater increase in their measured Achievement score at the time of posttest than will the High Achievement group."

This is equivalent to predicting a Main Effect for Achievement (i.e., Lows gain more than Highs). If both Hypotheses III and IV hold true, we should expect to find an Interaction Effect between Achievement and Treatment, the initially Low Achievement subjects in the Experimental Condition gaining more on Achievement Score from pre-to posttest.

Because of several problems and assumptions that we have to make concerning the Aronson Test, it was deemed desirable to have available an independent criterion to evaluate the findings made with the Aronson Test. Atkinson (1957) developed a model for predicting risk-taking behavior. He proposed that Achievement Scores obtained from the Thematic Apperception Test are indices of individual differences in the strength of Achievement Motive, conceived as a relatively stable disposition to strive for achievement or success. This motive-disposition is presumed to be latent until aroused by situational cues which indicate that some performance will be instrumental to achievement. The strength of aroused motivation to achieve is seen as a function of three variables:

(a) Expectancy, conceived as a cognitive anticipation, aroused by cues in a situation, that performance of some act will be followed by a particular consequence. The strength of an expectancy can be represented as the subjective probability of the consequence, given the act.

(b) Incentive represents the relative attractiveness of a specific goal that is offered in a situation, or the relative unattractiveness of an event that might occur as a consequence of some act.

(c) Motive is conceived as a disposition to strive for certain kind of satisfaction (i.e., success, accomplishment).

Atkinson distinguishes two classes of motives: tendencies to maximize satisfactions of some kind (approach tendencies) and tendencies to minimize pain, aversions or avoidance tendencies.

The strength of motivation to perform some act is assumed to be a multiplicative function of the strength of the motive, the expectancy (subjective probability) that the act will have as a consequence the attainment of an incentive, and the value of the incentive:

$$\text{Motivation} = f\ (\text{Motive} \times \text{Expectancy} \times \text{Incentive})$$

The Level of Aspiration Test to be described in the next section, was developed by the author to test the predictions of the Atkinson Model with our sample of Head Start children.

Table 1, adapted from Atkinson (1957), assumes that the Incentive Value of Success (I_s) is a positive linear function of difficulty. Then, the value $1 - P_s = I_s$ (Incentive Value of Success). When P_s is low (e.g., .10), the Incentive Value of Success is high (e.g.,.90). When P_s is high (e.g., .90), the Incentive Value of Success is low (e.g., .10).

The negative Incentive Value of Failure I_f can be taken as $-P_s$. When P_s is high (e.g., .90), as it is when confronting an easy task, the sense of humiliation accompanying failure is also high (e.g., -.90). When P_s

TABLE 1

THE PRINCIPLE OF MOTIVATION

	Motivation to Achieve				Motivation to Avoid Failure				Resultant Tendency
Tasks	M_s ×	P_s ×	I_s =	Approach	M_{af} ×	P_f ×	I_f	Avoidance	Approach-Avoidance
Box 1	1	.90	.10	.09	1	.10	-.90	-.09	0
Box 2	1	.70	.30	.21	1	.30	-.70	-.21	0
Box 3	1	.50	.50	.25	1	.50	-.50	-.25	0
Box 4	1	.30	.70	.21	1	.70	-.30	-.21	0
Box 5	1	.10	.90	.09	1	.90	-.10	-.09	0

Aroused Motivation to Achieve (Approach) and to Avoid Failure (Avoidance) as a joint function of Motive (M), Expectancy (P), and Incentive (I), where $I_s = (1 - P_s)$ and $I_f = (-P_s)$.

is low (e.g., .10), as in a difficult task, the sense of humiliation or embarrassment in failing is relatively low (e.g., -.10).

The Resultant Motivation to Approach Success is a multiplicative function of the Motive to Approach Success, the subjective Probability of Success, and the Incentive Value of Success. The Motivation to Avoid Failure is a multiplicative function of the Motive to Avoid Failure, the subjective Probability of Failure and the negative Incentive Value of Failure.

With these relationships in mind and the assumption that in each subject there is some Motive to Avoid Failure present, the Resultant Tendency to choose among the different alternatives will be the algebraic sum of these opposing tendencies. If the sum is positive, the Resultant Tendency is Approach; if the resultant is negative, the Resultant Tendency is Avoidance. In this latter case, the subject will try to leave the field, but if he is constrained by an extrinsic force (e.g., need to seek social approval or an explicit command by an authority figure) he will choose those tasks that will minimize the anxiety produced by the situation.

The column labeled Approach-Avoidance in the right-hand side of Table 1 represents the Resultant

Tendency when $M_s = M_{af}$. The column labeled Approach represents the case when $M_s > M_{af}$ and the column labeled Avoidance represents the Resultant Tendency when $M_{af} > M_s$.

The model presented in Table 1 permits the derivation of additional hypotheses to be tested with a Level of Aspiration Test. This test, to be described in detail in the next section, has been developed by the author.

In the derivation of the hypotheses, we will have to assume that a high score in the Aronson Test corresponds to a subject with $M_s > M_{af}$ and that a low score on the Aronson Test corresponds to a subject with $M_{af} > M_s$.

Hypothesis V. "Subjects with $M_s > M_{af}$ will tend to set their level of aspiration around the middle-risk zone where their Resultant Approach Tendency is maximized, while the $M_{af} > M_s$ subjects will have a greater variability in their choices since they will try to avoid the middle-risk range where their Avoidance Tendencies are maximal."

In studies of Level of Aspiration Behavior it has been observed that the most typical reaction to a success experience is a moderate rise in Level of Aspiration (typical shift) and that the usual reaction to failure is a moderate drop in Level of Aspiration.

However, some subjects on occasion seem to react in a paradoxical manner, raising their Level of Aspiration after failure and dropping it after success (atypical shift). This phenomenon can be predicted and explained by the Atkinson Model with knowledge of the subject's relative strength of the Motive to Achieve Success and the Motive to Avoid Failure.

Moulton (1965), using a three-task Level of Aspiration Test found that atypical shifts were significantly more frequent among $M_{af} > M_s$ subjects than among $M_s > M_{af}$ subjects.

The reasoning he followed to derive his predictions goes as follows: The $M_s > M_{af}$ subject will tend to choose a middle-risk task. After success he will tend to select a more difficult task and after failure he will select an easier task. The reason for these shifts is that following success the subjective Probability of Success will increase and the subjective Probability of Failure will also increase after a failure. If we take Task 3, with a $P_s = .50$, following success the subjective

Probability will increase to .60. Thus, Task 3 will now seem easier than before. If this subjective change can be assumed to generalize to similar Tasks, the next most difficult alternative, Task 4 (P_s = .30), will now be perceived as somewhat easier (P_s = .40), thus increasing the resultant Approach Tendency for that Task. Now we find that Tasks 3 and 4 will both result in a similar Approach Tendency according to our model. This is an approach-approach conflict, and the outcome will be either to remain at the same risk-level or to shift to an objectively (but not subjectively) more difficult task.

Moulton's experiment was so designed that all subjects were forced to attempt first a middle-risk task. Both success and failure were manipulated by the experimenter. Thus, for the $M_{af} > M_s$ subjects, after succeeding at a .50 probability task, the more difficult task now was perceived as easier (close to .50). Since that is the range that produces the most Tendency to Avoid Failure, the subject would be likely to go to an objectively (and subjectively) easier task (atypical shift).

Since our test does not force the $M_{af} > M_s$ subjects to try a middle-range task and furthermore they can stay with the same task (not the case in Moulton's), the reasoning does not fully apply. However, we will predict that

Hypothesis VI. "Low Achievement subjects will show more atypical shifts than High Achievement subjects."

PART III

THE RESEARCH SETTING

The Summer of 1967 Head Start Program provided the ideal subject population for our research. Since it was desirable to have both Mexican-American and Negro children in our sample, two areas were selected to provide the required population. New Braunfels (Blanco County) in Central Texas has a predominately Mexican-American Head Start population. It is close to Austin and it had three Centers with five, three, and two classes, respectively, located in working-class neighborhoods. Texas City and nearby La Marque and Hitchcock (Galveston County) provided the heaviest Negro concentration. The size of the Centers and their similarities in socioeconomic characteristics with the New Braunfels area made them ideal for our purposes. Thus, both groups lived in cities industrially and agriculturally sustained, and were close to a large urban and industrial center (San Antonio and Houston, respectively).

Testing Schedule

First and Second Weeks. The pretest with the Aronson Test and the Level of Aspiration Test plus the Experimental Manipulation with the teachers were completed during the first two weeks.

Fifth Week. The teacher observation with the Observer's Rating Form was conducted during the fifth week.

Sixth Week. The Winterbottom Questionnaire was administered to the mothers of the children during the sixth week of the program.

Seventh and Eighth Weeks. The posttest with the Aronson Test and the Level of Aspiration Test was completed during the last two weeks of the program.

The Instruments

I. Aronson's Graphic Expression Method for Measuring Need for Achievement (1958) (Aronson Test)

This test was empirically developed by Aronson who analyzed the differential characteristics of "scribbles" and "doodles" produced by High and Low Need Achievement

(T.A.T. type criteria) college students. The subjects were tachistoscopically presented two complex abstract designs and asked to reproduce them. Aronson derived a main score and four secondary indexes which he found were consistently associated with Achievement:

1. Discreteness vs. Fuzziness. Each unit is scored as either Discrete (single, unattached lines) or Fuzzy (overlaid). This is considered the "main" score because it is a fundamental characteristic of each and every unit of production, independent of its shape, direction, etc. A Discrete line is scored +1 and a Fuzzy line is scored -1.[1]

2. Space. The unused space is taken as the number of centimeters from the lowermost unit to the bottom of the paper. Space is scored negatively (-).

3. Diagonal Configurations. The score is the number of lines or units that form an angle with the horizontal between 15 and 75 degrees. Diagonal Configurations are scored positive (+).

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[1] A plus (+) score indicates High Need Achievement and a minus (-) score indicates Low Need Achievement.

4. S-shape Lines. All lines which consist of two crests, each pointing in opposite directions. S-shape score is positive (+).

5. Multiwave Lines. All undulating lines consisting of two or more crests pointing in the same direction. Multiwave score is negative (-).

Each unit of production is scored first in terms of Discreteness vs. Fuzziness and then classified into one of the secondary indices, which are mutually exclusive.

This test has been successfully used by McClelland (1958) with only minor modifications.

Present Administration. For use in our research, the two Designs used by Aronson (1958) and McClelland (1958) were reproduced on two large (15 by 20 inches) pieces of white cardboard in black ink. Each Design was shown by the Experimenter (E) for approximately seven seconds. The instructions were repeated at least two times with minor variations (and at least once in Spanish for our Mexican-American Groups). Previous to the administration of the first Design, a Demonstration Design was shown for five seconds. This Design contained seven lines (or units) representing the various types present in the main Designs.

The children were asked to reproduce it as best as they could. After two or three minutes, E examined their drawings and showed approval for their efforts, except to make clear that houses, trees, men, etc., were not acceptable. To subjects that claimed that they had been unable to recall what was in the picture it was made clear that "any" line would be acceptable, that they were free to invent their own shapes, and that the more different shapes they drew the better.

This demonstration trial proved to be extremely important in introducing the subjects to a novel task and in breaking negativistic barriers. At least one-third of every group failed to produce any line after the first exposure of the Demonstration Design. After being exposed to the Design with enough time to reproduce it, the idea of "just drawing lines of the various shapes that they wanted" was clearly established. During the actual administration, E looked at each child's work and praised it and stimulated them to draw more and different lines.

For roughly half of the groups, Design I was shown first and after the Level of Aspiration Test Design II was shown. The same sequence was used for each of the groups in both pre- and posttest.

Scoring Method. The *Aronson (1958) Scoring Manual* was used to score a random subsample of drawings for a preliminary analysis. Each Design was scored separately following Aronson's directions exactly. One modification, however, was necessary. Aronson scored Space as the number of centimeters from the bottom of the page to the lowest line. Since our subjects often rotated the paper (an 8 1/2 by 11 inch sheet of white typing paper) it was impossible to tell the top from the bottom. It was decided to score Unused Space as the number of tenths of paper left blank. This was accomplished using a transparent grid with ten equal divisions.

Because of the experimental nature of the test being used, two preliminary analyses were conducted using a subsample (N = 58 children, 116 drawings). The intercorrelations between the subscores were analyzed to see whether the original findings of Aronson were replicated. Since we had two sets of scores per subject (corresponding to the two designs), we were able to examine the Within Design and the Between Design correlations.

Within Design Correlations. In our subsample we found the correlation between Discrete and Diagonal Configurations subscores to be .46 for Design I and .59

for Design II. The Fuzzy and Multiwave subscores correlated .52 for Design I and .45 for Design II. The Space score was negatively correlated with Fuzzy, Discrete and Diagonal Configuration scores for both Design I and Design II. These results are entirely in line with Aronson's original findings and constitute an additional source of confidence in the test.

Between Designs Correlations. We found that Discrete I (Design I) and Discrete II (Design II) scores correlated .55; Fuzzy I and Fuzzy II .52; Diagonal Configurations I and II .32 and Space I with Space II .40. The low (nonsignificant) correlations between S-shape I and II and between Multiwave I and II were expected because of the unequal stimulus characteristics of the two Designs.

Additional Analyses. The possible effects of order of presentation of the Designs were investigated with t-tests for the difference between correlated means. The results showed that the production was dependent on the stimulus presented and that there was no systematic memory carry-over from one Design to the next.

The last analysis performed involved a comparison of our results with some previous data presented by

McClelland (1958). He obtained a Total Line Score for his two groups plus the original results that Aronson reported for his college subjects. The Total Line Score was obtained by adding Discrete and Fuzzy scores across Designs and then taking Discrete - Fuzzy. Doing this we found that the Mean Line Score for our subsample was = 8.55 (Standard Deviation 13.48). The Summary Table presented by McClelland (1958) showed an increase of the Line Score with age across the samples he was comparing. We found by inspection that the mean for our sample was almost equal to that of Aronson's 19 year old college students (Mean = 8.81, Standard Deviation = 9.94). The mean for McClelland's 5 year olds was 3.23 (Standard Deviation = 7.72).

The analysis of our distribution of scores unveiled a major problem. Following Aronson's Manual each occurrence of a line is scored. When three or more lines appear in a parallel fashion, they are scored as a group (+1), thus having the same weight on the final score as a single line. But when only two lines appear together, they are scored individually as +1. The presence in our sample of five subjects that filled the paper with groups of two lines produced an inflated mean, a large Standard Deviation and a highly skewed distribution.

With a reasoning that is congruent with Aronson's theoretical explanation of the expressive basis of his test, the decision was made in that the repetition of the same pattern, although not falling in Aronson's "group" definition, did not constitute an achievement sign but a mechanical repetitiveness equivalent to that justifying the "group" scoring.

The rescoring of our data with this new criterion produced a new distribution with a Mean = 4.85 and a Standard Deviation = 5.56, very close to the values of McClelland's 5 year olds. The interscorer reliability before the revision was .81 (N=50 drawings); with the revision dropped to .78. The score-rescore reliability with two months difference was .89 (N=35 drawings). These unexpected problems caused the decision to drop the additional scores and rely only on the Line Score for our analysis. This is not too serious since this score was found to have the same correlation with the T.A.T. criterion as a composite score using all five indices (Aronson, 1958).

In summary, for each subject we have the following scores:

Pretest: Productivity (Discrete + Fuzzy), both Designs
Achievement (Discrete - Fuzzy), both Designs

Posttest: Productivity (Discrete + Fuzzy), both Designs
Achievement (Discrete - Fuzzy), both Designs

Gains: Productivity [Productivity(post) - Productivity(pre)]
Achievement [Achievement(post) - Achievement(pre)]

II. Level of Aspiration Test

This test, developed by the author, follows the pattern of previous Level of Aspiration tasks. The goal is to provide the subject with distinct alternatives of action that differ in their probabilities of success.

The Marble Game (as it was described to the subjects) consists of five cardboard boxes (shoeboxes covered with colored paper), each with a hole in the center of the side facing the subject. The task consists of rolling a standard size marble through the hole and into the box from five feet away. The characteristics of the five boxes used were as shown in Table 2.

The combination of width and height was used to increase the "subjective" size of the holes, although in rolling the marble through the hole the height was irrelevant. The boxes were aligned against a bare wall, and ordered from the largest to the smallest hole from left to

TABLE 2

LEVEL OF ASPIRATION TEST CHARACTERISTICS

Box No.	Hole Width cm.	Hole Height cm.	Hole Area sq.cm.	Color	Score	Theoretical Probability of Success
1	8	6	48	red		.90
2	6	5	30	blue	2	.70
3	5	4	20	white	3	.50
4	4	3	12	yellow	4	.30
5	3	2	6	green	5	.10

right. A chalk line was drawn on the floor five feet away from the boxes.

The testing room was usually an empty classroom with chairs and desks prearranged to conduct both the Aronson Test and the Level of Aspiration Test in one session. When no special room was available, the teacher was asked to take the girls out to play while the E, assisted by one of the teacher's aides, conducted the testing. All the instructions and arrangements were made by the E and the aide instructed not to interfere. Each class was tested as a group, although in some instances it was necessary to combine two classes because of a small number of boys present.

The boys were directed to sit in desks facing the E and away from each other to avoid contact in the Aronson Test. They were given white paper and crayolas of different colors and asked to reproduce the Demonstration Design. After that, the papers were collected, new sheets were passed out and they were asked to reproduce Design I (or II).

After they had finished, they were directed to sit in chairs or on the floor in front of a bare wall. The E told the group:

E "We are going to play a game."

E then brought the white (No. 3) box, and showing it to the subjects asked:

E "What is this?"

S's "It is a box."

E placed the box against the wall with the hole facing the subjects and

E "Yes, it's a box, but we are going to pretend it is a house."

S's "Yes, it's a house."

E "Now, what is this?" (showing the hole in the center)

S's "It's a door," or "It's a window."

E "Yes, it's the door of the house."

E "Now, what is this?" (showing a marble)

S's "It's a marble."

E "Yes, it's a marble, but we are going to pretend it is a little mouse."

S's "Yes, it's a little mouse."

E "Now, you see, this little mouse lives in this little house, and he has to go through the door to get in."

E "The game we are going to play is very easy. All we have to do is to put the little mouse inside his house and we do it like this."

(The E demonstrated the task several times. At this point the subjects were highly motivated and eager to play.)

E "One moment. We are going to play right now but we have to take turns. You (Johnny), are going to play first, then you, and so on."

At this point it was decided to provide the subjects with a little practice and with the reinforcing experience of "success." Thus, five exercise trials were given, E showing the boys who needed it the best way to throw, how to aim, etc. For each subject five trials were given and if "success" was not achieved in any of the five trials, additional trials were provided until at least one trial was a "success." The subject's and the group's reactions were clear indications that the task had succeeded in arousing interest.

Once all the subjects had tried and succeeded with the Box 3 (white), they were asked to take their places and listen.

E "Now, here I have another house (showing red Box 1). As you can see, this is a red house and the door is much larger than the one in the white house."

The red box then was placed to the left of the white box with the hole facing the subjects. The same procedure was followed until all five boxes were properly ordered and placed in front of the subjects.

E "You see, we have a red house, a blue house, a white one, a yellow, and a green one. The doors, as you see, are not the same size. This one (pointing to Box 1) is much bigger than this one (pointing to Box 2)."

This comparison was made until all pairs had been considered.

E "So, you can see that this one (Box 1) is an easy one to roll the marble into and this one (Box 5) is a hard one to get. Now, each of you is going to have ten marbles to play with, and you can try any house you want, or all of them in turn, or only two, or three, or one if you like."

(It was made clear through repetition that they had complete freedom to try any box in any sequence.)

E "Remember that you have to throw from behind this line, one marble at a time and that you have to stand in front of the house you are aiming at."

While reactions to success and failure from the group almost always were loud and permitted, "coaching" was discouraged, E reminding the "coach" that he would have his own chance to do it. With a final "Do the best you can," each subject was allowed to throw his ten marbles.

At the beginning of the session the subject playing was reminded from time to time that he was free to try any box at any time and as many times as he wanted.

After the seventh marble, each subject was told that he had only three more chances.

A verbal reinforcement from E (and usually from the audience) followed each successful trial. After each unsuccessful attempt, E would say

E "Try again anywhere you want."

Also, there was occasionally a "Boo!" from the group.

The first block of ten trials then was "rewarded" with the approval of E and the audience, while failure was "punished" by a noncommital "try again" and an occasional "Boo!" from the group.

After the last subject had completed his ten trials,

E "How did you like the game?"

S's "I liked it very much" (and similar comments).

E "Would you like to play one more time?"

S's "Yes, let's plan again."

After this, E proceeded to introduce the Rewarded Block of ten trials.

E "O.K., we are going to play again, but this time we are going to play for prizes."

E then brought forth a sack of candy (jelly beans) that had been concealed from the subjects' view.

E "What are these?"

S's "Candy" or "jelly beans."

E "O.K., we will do this. Each time you get a marble into this house (Box 1), you will get one jelly bean (E placing one jelly bean on top of Box 1). Now, if you get one marble inside this house (Box 2), then you will get two jelly beans (E placing two jelly beans on top of Box 2)."

The same procedure was followed with every remaining box, using three, four, and five jelly beans, respectively.

E "You see, because this (Box 1) is an easy one to get a marble in we give only one jelly bean. You don't get a big prize for something that is easy to do. For the same reason we are going to give five jelly beans for the green (Box 5) house because it's a hard one to get."

The same explanation was used comparing the rest of the boxes. The instructions were designed to strengthen the probability notion by using differential reward. After a "Go ahead, do the best you can," each subject was allowed ten trials. After each successful trial, the subject was asked to stop and watch E deposit the number of jelly beans he had won on a paper. This was done to make "success" and "reward" for that particular trial more salient. At this point, the reactions of the group followed the usual pattern; exclamations for success and silence or "Boo's" for failure. The experimenter also verbally rewarded success and gave a noncommital "try again anywhere you want" to failure.

It was suspected that aside from the differences between Rewarded and Nonrewarded Blocks there could be a "sequence effect." For this reason, half of the classes were run with the Nonrewarded--Rewarded Block sequence (NR-RW) and the other half with the Rewarded--Nonrewarded (RW-NR) sequence.

At the end of the first (Rewarded) Block in the RW-NR sequence, the subjects were told that they would play again, but this time without prizes, "just for the fun of it." In only one instance did a subject protest the new arrangement and refuse to play. However, after seeing the group enjoy the second Block he asked to be allowed to play.

Once all the subjects had been run for two Blocks, E asked them to go back to their seats and showed Design I (or II) of the Aronson Test. After they had completed their drawings, E told them that they had done a very good job with the pictures and gave them each three jelly beans. This gave the appearance of being independent from the Marble Game and served to finish the testing session with good will towards the E. This also insured cooperation for the posttest even from subjects who did not get any prizes in the actual game (only a few cases).

The testing procedure during the posttest session was identical except that the practice trials were omitted.

The E recorded for each trial the Box aimed at and the outcome (success or failure) for each Block. The scores derived from these data are:

1. Mean Box aimed at on each Block of ten trials.
2. Mean Box for both Blocks combined.
3. Variability (Standard Deviation) of boxes for each Block.
4. Variability (Standard Deviation) for both Blocks combined.
5. Actual Probability of Success for each box.
6. Shifts in Box aimed following success.

III. Winterbottom's Questionnaire on Demands and Restrictions for Training for Independency and Mastery (1958)

This is the original instrument used by Winterbottom (1958) to study the training and reinforcement patterns of mothers of High and Low Need Achievement children. The questionnaire asks the mother of the child for endorsement or rejection of 20 "Demands" and 20 "Restrictions" in training for independency and mastery.[1] The questionnaire was translated into Spanish[2] and examples were provided for each "Demand" and "Restriction." This was done to make the situations a little more concrete. Previous experience in interviewing Mexican-American mothers indicated to us that it was desirable to structure the interview in more concrete terms to avoid random answers to statements that are too general or imprecise. For each "Demand" and "Restriction" endorsed, the mother was asked to state the age at which she thought her child should have mastered that particular behavior.

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[1] For text of Questionnaire see Appendix 1.

[2] For text of the translated Questionnaire see Appendix 2.

Winterbottom presented her subjects with six possible alternatives describing reactions to good and unsatisfactory performances in learning the "Demands" and "Restrictions." These reactions are presented here ranked in terms of the degree or intensity of their "reward" and "punishment" value (from strongest to weakest).

Reactions to Satisfactory Performance:

A. Reward reactions

1. Kiss or hug him to show how pleased you are.
2. Tell him what a good boy he is. Praise him for being good.
3. Give him a special treat or privilege.

B. Neutral reactions

4. Do nothing at all to make it seem special.
5. Show him you expected it of him.
6. Show him how he could have done better.

Reactions to Unsatisfactory Performance:

A. Punishment

1. Scold or spank him for not doing it.
2. Show him you are disappointed in him.
3. Deprive him of something he likes or expects, like a special treat or privilege.

B. Neutral reactions

4. Don't show any feeling about it.
5. Point out how he should have behaved.
6. Just wait until he does what you want.

Winterbottom asked her subjects to select from this list the three most common reactions she had in order to get an index of relative reward and punishment behavior.

We followed a different procedure from Winterbottom's. To each "Demand" and "Restriction" endorsed, we asked each of our subjects to state her typical reaction to good performance providing the first set of alternatives. The same procedure was used with unsatisfactory performance using the second set of alternative reactions. As a result, we have a somewhat more stable index of reactions since it is based on a large number of instances.

In summary, the interview provides data on each child-mother dyad as well as normative data for our Negro and Mexican-American subgroups. The scores derived from the Winterbottom interview are:

1. Total number of Demands endorsed.
2. Total number of Restrictions endorsed.
3. Age at which each Demand should be mastered.

4. Age at which each Restriction should be mastered.
5. Reaction to good performance in learning a Demand.
6. Reaction to failure in learning a Demand.
7. Reaction to good performance in learning a Restriction.
8. Reaction to failure in learning a Restriction.

IV. The Observer's Rating Form (Caldwell, Pierce-Jones, and Linn, 1966)[1]

This is an instrument especially designed for use with Head Start teachers. Among the factors isolated by previous factor analytical procedures, we selected three for their relevance to our experimental manipulation. They are:

Factor III	"Items related to the Child's social interactions."
Factor IV	"Items related to the Child's Emotional Development."
Factor V	"Items related to the Motivation of the Child."

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[1] See Appendix 3.

This instrument is intended to serve as a check on our manipulation as well as a source of additional data on the actual teacher behavior in the classroom.

By content analysis the items were arranged for two subscales:

I. Restrictive classroom behavior (Scale I) and
II. Achievement-promoting behavior (Scale II).

A high score on Scale I indicates behavior that restricts movement and expressive behavior in general, while a high score on Scale II indicates attempts on the part of the teacher to encourage and promote Achievement.

V. The Experimental Manipulation

Our aim in this study is to evaluate the impact of Head Start on the development of the Achievement Motive. Because of the nature of our population and the types of reinforcement histories that we hypothesized, we expect a general increase in Need Achievement. However, our goal is to isolate the main factors behind this expected increase. We assume that Head Start will be a source of massive and systematic reinforcement so the choice of the independent variable is natural. For these reasons, at the beginning of the Program we divided our Centers into Experimental and Control Groups. Since the information and special instructions given to the teachers in each condition were different, we felt it necessary to assign Centers and not classes (or individual teachers) to Conditions. This was done because the instructions, being different for each Condition, could have been transmitted and discussed between teachers in the same Center, thus making the Manipulation completely ineffective.

The Experimental Manipulation was administered to the teachers in each Center in a group session. The meaning of Achievement Motivation and its importance was outlined, explaining the theoretical notions about its development. The effects of reward and praise and encouragement were explained. Then, the teachers were asked to stress achievement-oriented behaviors and to reward generously and frequently each and every attempt on the part of the children in this direction.

The following list of types of behavior was given as examples of achievement-related behaviors:

1. Competition in games and sports.
2. Independent activities.
3. To do things by himself without asking for help.

4. To assert himself in groups.
5. To try hard.
6. To assume responsibilities with school materials.
7. To take care of his belongings.
8. To take pride in the products of his school activities.
9. To do some regular tasks in the classroom (e.g., clean blackboard, etc.).
10. To be able to eat alone, using fork, knife, etc.
11. To stand up for his rights with other children in games, sports, etc.

Questions were answered and we encouraged teachers to become ego-involved to maximize their interest. They understood that they, as teachers, would at least be indirectly evaluated through the performance of their classes.

Later on, each teacher and her aides were given the same explanation but in simpler terms since the aides spent as much time with the children as did the teachers themselves.

The teachers in the Control Condition were told that the testing to be conducted involved research on "color preferences" in children and nothing was said about their being in a Control Condition.

VI. The Sample

The total number of children in the sample is 86. This number includes all those children for whom complete data is available; as this required pre- and post-test with the Aronson and Level of Aspiration Tests as well as interview with the mother and observation of teacher behavior, there was a considerable loss of subjects due to absences, sickness, etc. However, the losses are apparently not systematic. The composition of the subsamples is presented in Table 3.

The ages of the children at pretest time are presented in Table 4.

TABLE 3

COMPOSITION OF THE SAMPLE

Center	Condition	Number of Classes	Number of Children
New Braunfels (Mexican-American subsample)			
Lone Star	Experimental	5	22
Carl Schurtz	Control	3	9
M. Lamar	Control	2	9
Subtotal		10	40
Galveston County (Negro subsample)			
Texas City	Experimental	4	14
Hitchcock	Experimental	3	12
La Marque	Control	4	20
Subtotal		11	46
Total sample		22	86

TABLE 4

AGE IN MONTHS AT PRETEST TIME

Group	Mean	Median	S.D.	Range
Negroes	79	79	3.98	71 - 89
Mexican-Americans	73	75	6.59	56 - 81

PART IV

RESULTS

1. The Aronson Test

The two subsamples (Negro and Mexican-American) were divided by their respective medians on the distribution of pretest Achievement Scores to generate a High Achievement (Highs) and Low Achievement (Lows) Groups. These Groups are used throughout the analysis of this study.

The median was used instead of high and low quartiles because taking only the extreme scores could have generated groups differing, not only in Achievement, but also in any other variable that might be correlated to Achievement as expressed in "doodles" and "scribbles." Furthermore, that would have reduced the number of subjects in half.

A three-way analysis of variance of the two Gain Scores was performed. The Productivity Gain Score was obtained by subtracting the pretest Productivity Score from the posttest Productivity Score while the Achievement Gain Score was obtained by the same procedure using the

Achievement Scores. Table 5 presents the three Factors and their respective Levels.

TABLE 5

FACTORS AND LEVELS FOR THE ANALYSIS OF VARIANCE

Factor Name	Level 1	Level 2
A = Condition	Experimental	Control
B = Ethnicity	Negro	Mexican-American
C = Achievement	High	Low

Three different analyses were performed with three different criteria to define the breakdown of the sample for the A Factor:

Criterion I. Centers were assigned at random to the Experimental and Control Conditions at the beginning of the study, and the teachers were given different instructions on how to treat the children.

Criterion II. Using the scores from the Scale I (Restrictive Classroom Behavior) of the Observer's Rating Form, the teachers rated below the median of the distribution were classified in Level 1 (Low Restrictive), and teachers rated above the median were classified in Level 2 (High Restrictive) on the A Factor.

Criterion III. Breaking the distribution of scores for Scale II (Achievement-promoting Behavior) of the Observer's Rating Form, the teachers were classified as Level 1 (High Achievement-promoting Behavior Score) and Level 2 (Low Achievement-promoting Behavior Score).

The three analyses of variance produced by these alternative ways of defining the A Factor yielded very similar results. It is for this reason that only the tables for Criterion I for the A Factor will be reported.

Table 6 presents the cell means for the Productivity Gain Score, while Table 7 presents the sources of variance, F-ratios, and significance levels.

The results presented in Tables 6 and 7 indicate that the Control Groups had a greater increase in their Productivity Scores than did the Experimental Groups. This Main Effect does not have too much importance and was not replicated when the analysis was performed using Criteria II and III for the A Factor. On the other hand, the analysis of variance shows a significantly greater gain in Productivity Scores for the Mexican-American

TABLE 6

CELL MEANS FOR PRODUCTIVITY GAIN SCORES

Condition	Ethnicity	Achievement High	Achievement Low
Experimental	Negro	-.5000	-.6667
	Mexican-American	1.5000	.7500
Control	Negro	.7778	1.8182
	Mexican-American	6.7142	3.0909

The Productivity and Achievement Gain Scores were obtained by subtracting the Productivity and Achievement Scores of the pretest from the corresponding scores of the posttest. Thus the means represent increase if sign is positive (+) or decrease if the sign is negative (-).

TABLE 7

SOURCES OF VARIANCE FOR PRODUCTIVITY GAIN SCORES

Source	M.S.	D.F.	F-Ratio	P.
Total	36.476	85		
Between	57.107	7		
A (Condition)	162.766	1	4.7009	.0312
B (Ethnicity)	143.473	1	4.1437	.0426
C (Achievement)	15.563	1	.4495	.5116
A X B	18.277	1	.5279	.5235
A X C	3.528	1	.1019	.7490
B X C	34.985	1	1.0104	.3191
A X B X C	21.157	1	.6110	.5572
Within	34.624	78		

subsample. There was no significant difference in the Productivity Score between the two ethnic groups at pretest time.

The analysis of the Achievement Gain Score is presented in Tables 8 and 9. The results presented correspond to Criterion I for the A Factor and are very similar to the results obtained with the other two Criteria.

The analysis of the Achievement Gain Score with all three Criteria for the A Factor shows a significantly greater gain in Achievement Scores for the Low Achievement Group. This finding, together with the absence of a similar Main Effect for Productivity Gain Score, indicates that the change is of a qualitative nature. It was the type of lines and not their number that changed from pre- to posttest.

Table 10 presents the results of the test of the Mean Achievement Gain Score against the null hypothesis of no change for both ethnic groups.

TABLE 8

CELL MEANS FOR ACHIEVEMENT GAIN SCORES

Condition	Ethnicity	Achievement High	Achievement Low
Experimental	Negro	-.2143	2.3333
	Mexican-American	1.2143	.3750
Control	Negro	-.3333	4.8182
	Mexican-American	1.5714	3.4545

TABLE 9

SOURCES OF VARIANCE FOR ACHIEVEMENT GAIN SCORES

Source	M.S.	D.F.	F-Ratio	P.
Total	25.448	85		
Between	33.388	7		
A (Condition)	42.783	1	1.7296	.1893
B (Ethnic)	.000	1	.0000	.9932
C (Achievement)	97.130	1	3.9288	.0482
A X B	1.457	1	.0589	.8041
A X C	36.049	1	1.4574	.2290
B X C	56.283	1	2.2754	.1316
A X B X C	.18	1	.007	.9770
Within	24.735	78		

TABLE 10

SIGNIFICANCE TEST OF MEAN ACHIEVEMENT GAIN SCORE

Group	N	Mean	S.D.	S.D.(M)	z	P
Negro	46	1.6304	4.3785	.6456	2.52	.006
Mexican-American	40	1.7250	3.9749	.9192	1.87	.03

The next analysis to be presented is an intercorrelation analysis of the six scores derived from the Aronson Test. These correlations were computed for each ethnic group separately. The following listing represents the six variables in the intercorrelations of Table 11:

1. Productivity Score (pretest)
2. Achievement Score (pretest)
3. Productivity Score (posttest)
4. Achievement Score (posttest)
5. Productivity Gain Score
6. Achievement Gain Score

The data presented permit the evaluation of the hypothesis presented in Part II.

TABLE 11

INTERCORRELATIONS BETWEEN ARONSON TEST'S SCORES[1]

	1	2	3	4	5	6
1 Negro	1.00	n.s.	.429**	n.s.	-.612**	n.s.
Mexican-American	1.00	n.s.	.444**	n.s.	-.2916*	n.s.
2 Negro		1.00	n.s.	.379**	n.s.	-.553**
Mexican-American		1.00	n.s.	.533**	n.s.	-.306*
3 Negro			1.00	.513**	.435	.515**
Mexican-American			1.00	.533**	.727	.372*
4 Negro				1.00	.288*	.551**
Mexican-American				1.00	.411**	.495**
5 Negro					1.00	.296*
Mexican-American					1.00	.192
6 Negro						1.00
Mexican-American						1.00

[1] Upper line Negroes (N = 46) and lower line Mexican-American (N = 40).

* = significant at the .05 level.

** = significant at the .01 level.

Hypothesis I. "Our subjects will differ in their Achievement Motive as measured by the Aronson Test at pretest time."

The obtained distributions for our two ethnic groups permitted us to generate the High and Low Achievement Groups. The Mean Achievement Score and the Standard Deviations do not differ significantly from those of the five year old subjects in the McClelland study (1958).

Hypothesis II. "There will be an overall increase in the Achievement Motive between pre- and posttest as measured by the Aronson Test."

The data presented in Table 10 confirm this hypothesis. Both ethnic groups showed an overall increase in their Achievement Scores.

Hypothesis III. "The children in the Experimental Condition will show a greater gain in the Aronson Test scores than the children in the Control Condition."

The results of the analysis of variance presented in Table 9 do not support this hypothesis. We failed to find a Main Effect for Treatment. This would seem to rule out the effect of reinforcement on Achievement Motivation development. However, this is not the case. Even though the data do not support this hypothesis, there are several factors that can explain this fact.

The Observer's Rating Form data show that there was no significant difference between the observed behaviors of the teachers in either condition. Apparently the instructions were not followed, thus producing similar environment in all classes. Even if we had found differences between the teachers on both conditions the results would still have been inconclusive because of a failure to control the behavior of the teacher aides. This is a point that will be discussed further in the conclusion section.

Hypothesis IV. "The Low Achievement Group (i.e., High on the Motive to Avoid Failure) will show a greater increase in their measured Achievement Score at the time of posttest than will the High Achievement Group."

This hypothesis, based on the assumption that the Motive to Avoid Failure has a development that is similar and parallel to the Motive to Achieve Success, and also based on the assumption that a low score on the Aronson Test indicates a High Motive to Avoid Failure, seems to have been confirmed. Table 9 shows a significant Main Effect for Achievement, the Low Achievement Group increasing their score more than the High Achievement Group.

There would seem to be a "ceiling effect" for the Achievement Score. Only those subjects that had a low score at pretest could improve. This improvement was of a qualitative nature, since there was no Main Effect for Productivity scores. Furthermore, the correlations between the scores for the Aronson Test presented in Table 11 confirm this explanation. There was a negative correlation between Productivity scores and Achievement scores in the pretest with Gain scores in posttest.

This analysis would indicate that the changes occurring during participation in Head Start were more in the direction of influencing the Motive to Avoid Failure, decreasing it or extinguishing it, and secondarily enhancing the strength of the Motive to Achieve Success.

These conclusions are tentative in the sense that in all previous studies the Motive to Avoid Failure has been measured independently from the Motive to Achieve Success.

Overall, the data presented may indicate that the Head Start experience was instrumental in producing changes in the Achievement Motive as measured by the Aronson Test. However, it can be argued that this change in Achievement Scores is an effect of time alone. This alternative explanation is consistent with the theories of McClelland and associates. Since we do not have a Control Group not attending Head Start or any similar Program, we will attempt to answer this question with the aid of additional data.

We have computed the correlation between Achievement Score (pretest) and age of the children at that time (in months). The correlation coefficients are .2509 for the Negro subsample (N = 46) and .1703 for the Mexican-American subsample (N = 40). These coefficients, although in the predicted direction, do not reach statistical significance.

If each subsample is divided at its median for age and the Mean Age and the Mean Achievement score at pretest time are computed the following results are obtained:

TABLE 12

MEAN AGE AND MEAN ACHIEVEMENT SCORE FOR TWO AGE GROUPS IN THE NEGRO SUBSAMPLE

(N = 46)

Group	Mean Age in Months	Mean Achievement Score	N
Younger Group	75.95	2.708	24
Older Group	82.27	3.772	22
Difference	6.32	1.064	

If we assume that these differences represent a stable and significant relationship between age and Achievement (they do not reach statistical significance), then we find that to 6.32 months of age difference, there is a difference of 1.064 points on Achievement score. At this rate, we would expect the Achievement score to increase by .168 in one month and by .252 in six weeks (the time between pre- and posttest).

The actual increase in Achievement score for the Negro group was 1.6304 points, more than six times what would be expected by the passage of time alone.

This analysis cannot satisfactorily replace the absence of a true control group, but it is illustrative of what would be expected if time were the only factor responsible for the development of the Achievement Motive. This analysis was performed with the Negro group because they had the highest correlation between age and Achievement of the two groups.

2. The Level of Aspiration Test

All the analyses of the Level of Aspiration Test have been done using the two Achievement Groups generated by the pretest scores on the Aronson Test. The assumption is made that a High Achievement subject corresponds to Atkinson's $M_s > M_{af}$, and that a Low Achievement subject corresponds to Atkinson's $M_{af} > M_s$.

The Atkinson model permits the generation of predictions about the choices a subject will make with the knowledge of his Achievement Group. These predictions refer to his preferences for difficulty level, spread of his choices, and the shifts in Level of Aspiration following success in any Box.

Ideally, each subject's choices should be evaluated with respect to the group with which he was tested, since this was a group test. However, the size of the groups and the similarity of their choices in some instances argued against this procedure. Instead, each score was compared with the distribution of scores of those subjects in the same ethnic group who were tested with the same sequence of Rewarded and Nonrewarded blocks. Thus, "his group" from now on refers to subjects of the same ethnic group that were tested with the same sequence.

Hypothesis V. "Subjects with $M_s > M_{af}$ (Highs) will tend to set their Level of Aspiration around the middle-risk zone where their resultant tendency is maximized, while the $M_{af} > M_s$ (Lows) subjects will have a greater variability in their choices since they will try to avoid the middle-risk range."

This hypothesis was operationalized by predicting that High Achievement subjects will have their Mean Box Score falling in the two middle quartiles of the distribution of Mean Box scores of their group, while the Low Achievement subjects will have their Mean Box scores falling in the extreme quartiles of the distribution. With the same reasoning it was predicted that the Variability Score (Standard Deviation of the choices) for the High Achievement subjects would fall below the median (small variability) of the distribution of the Variability Scores while the Low Achievement subjects would have a high (above the median) Variability Score.

In this way one may tally Expected (E) or Unexpected (U) for each subject according to whether or not the subject behaved as predicted from the Atkinson Model.

The Chi-square Test was used to test the obtained frequencies of E and U against the hypothesis of equal frequencies (50/50 split) expected from a random distribution.

Table 13 shows the variable (score), the group, the total number of subjects (N), the Chi-square, degrees of freedom, and the probability level P for the Experimental and Control Groups.

Table 13 shows that the predictions for the Mean Box Score on the pretest failed to reach significance. The Variability Score prediction was better for the Experimental Group in the pretest, while the Mean Box Score predictions for the Experimental Group in the posttest were not significant. During posttest, the predictions for the Variability Score were better for the Experimental Group.

TABLE 13

LEVEL OF ASPIRATION TEST PREDICTIONS BY CONDITION

Variable	Group	(N)	(E)	(U)	X^2	D.F.	P
Mean Box	Experimental	48	29	19	2.080	1	.08
(pretest)	Control	38	22	16	.940	1	.35
Variability	Experimental	48	31	17	4.080	1	.03
(pretest)	Control	38	20	18	.100	1	.75
Mean Box	Experimental	48	24	24	.000	1	.99
(posttest)	Control	38	23	15	1.680	1	.20
Variability	Experimental	48	32	16	5.332	1	.02
(posttest)	Control	38	21	17	.420	1	.50

The predictions analyzed in terms of ethnic groups on Table 14 show that, in general, the predictions were better for the Negro subsample. There is also improvement from pre- to posttest, particularly for the Variability Score predictions.

The most important analysis is presented in Table 15 with the two Achievement Groups; the High Achievement Group prediction for Mean Box and Variability Scores were better at pretest than the predictions for the Low Achievement Group. Again it can be seen that the predictions for Variability Score were much better than the predictions for Mean Box Score. For the High Achievement Group they reached statistical significance at posttest time. If the Chi-squares are summed for both groups we see that the predictions are better than chance at the .03 level of significance.

Hypothesis VI. "Low Achievement subjects will show more atypical shifts than High Achievement subjects."

From our definition of "typical" and "atypical" shifts following a successful trial, we have generated a set of criteria to judge the shifts of every subject in

TABLE 14

LEVEL OF ASPIRATION TEST PREDICTIONS BY ETHNIC GROUPS

Variable	Group	(N)	(E)	(U)	X^2	D.F.	P
Mean Box (pretest)	Negro	46	29	17	2.630	1	.10
	Mexican-American	49	22	18	.225	1	.64
Variability (pretest)	Negro	46	29	17	2.630	1	.10
	Mexican-American	40	22	18	.225	1	.64
Mean Box (posttest)	Negro	46	27	19	1.065	1	.30
	Mexican-American	40	20	20	.000	1	.99
Variability (posttest)	Negro	46	27	19	3.600	1	.05
	Mexican-American	40	26	14	3.025	1	.08

TABLE 15

LEVEL OF ASPIRATION TEST PREDICTIONS BY ACHIEVEMENT GROUPS

Variable	Group	(N)	(E)	(U)	X^2	D.F.	P
Mean Box (pretest)	Highs	44	27	17	1.841	1	.17
	Lows	42	24	18	.595	1	.55
	Both	86	51	35	2.436	2	.30
Variability (pretest)	Highs	44	27	17	1.841	1	.17
	Lows	42	24	18	.595	1	.55
	Both	86	51	35	2.436	2	.30
Mean Box (posttest)	Highs	44	22	22	.000	1	.99
	Lows	42	25	17	1.167	1	.27
	Both	86	47	39	1.190	2	.55
Variability (posttest)	Highs	44	31	13	6.580	1	.01
	Lows	42	22	20	.240	1	.87
	Both	86	53	33	6.820	2	.03

our sample. After each success, the subject has three alternatives:

1. To try a more difficult task higher difficulty = H)
2. To try the same task (same difficulty level = S)
3. To try an easier task (lower difficulty level = L)

For each subject a count of these three different actions was made. Since the predictions depend on the Achievement Level, we have the following criteria to classify our subject's behavior as Expected or Unexpected:

For High Achievement subjects

Expected (E) when: (a) $H > S > L$ or
(b) $H + S > L$ or
(c) $H = L$ or
(d) $H + S = L + S$

Unexpected (U) when none of the above was true.

For Low Achievement subjects

Expected (E) when: (a) $L > S > H$ or
(b) $L + S > H$ or
(c) $L = H$ or
(d) $L + S = S + H$

Unexpected (U) when none of the above was true.

Examination of the above criteria reveals that we are likely to capitalize in chance since the equilibrium (same number) between L and H shifts is classified as expected for both the High and Low Achievement. The summing of the number of S shifts to the number of H or L can be justified in the light of the process of generalization explained in presenting the hypothesis. The model assumes a probabilistic tendency to act one way or another. It is felt that this is a fair test of the theory. Furthermore, however likely to capitalize on chance, this analysis is closer to statistical purity than McClelland's (1958) procedure. Instead of classifying behavior of individuals, as this study has done, McClelland used the absolute number of observations (i.e., throws to the peg) instead of the number of subjects to conclude that "30 percent of the throws made by the 'Lows' are farthest and nearest to the peg, whereas only 11 percent of the throws made by the 'Highs' are fartherest and nearest to the peg (Chi-square 12.8, p .10)" (McClelland, 1958, p. 315).

The Chi-square Test was used to evaluate the observed frequencies of Expected and Unexpected behaviors against the hypothesis of equal frequencies.

Tables 16, 17, 18, and 19 present the results for shifts by Condition, Ethnic Group, Achievement Level, and Sequence of Testing.

The results reported in Table 16 show that the predictions from the Atkinson's Model were confirmed in general. The predictions are better for the posttest shifts, for both the Experimental and Control Groups.

Table 17 shows that the behavior of the Mexican-American Group was predicted better but this difference disappears at posttest time.

Table 18 results show that the shifts of the High Achievement Group follow the pattern expected from the model, while the Low Achievement subjects do not. At posttest time, the shifts of the High Achievement subjects conform almost perfectly to the predictions. On the other hand, the Low Achievement subjects do not. This would seem to constitute a negative result, but this conclusion is misleading. The predictions were made assuming that the Low Achievement subject would conform to the pattern expected from the subject whose Motive to Avoid Failure is stronger than his Motive to Achieve Success. However, as the Aronson Test results have shown, there was a Main Effect for Achievement, that is, Low Achievement

TABLE 16

SHIFTS IN LEVEL OF ASPIRATION TEST BY CONDITION

Variable	Group	N	(E)	(U)	X^2	D.F.	P
Shifts after	Experimental	48	33	15	6.740	1	.01
success	Control	38	26	12	5.200	1	.02
Pretest	Both	86	59	27	11.940	2	.00
Shifts after	Experimental	48	35	13	10.820	1	.00
success	Control	38	28	10	8.520	1	.00
Posttest	Both	86	63	23	19.340	2	.00

TABLE 17

SHIFTS IN LEVEL OF ASPIRATION TEST BY ETHNIC GROUP

Variable	Group	N	(E)	(U)	X^2	D.F.	P
Shifts after success Pretest	Negro	46	29	17	2.630	1	.10
	Mexican-American	40	30	10	9.025	1	.00
	Both	86	59	27	11.655	2	.01
Shifts after success Posttest	Negro	46	34	12	9.578	1	.00
	Mexican-American	40	29	11	7.225	1	.00
	Both	86	63	23	16.803	2	.00

TABLE 18

SHIFTS IN LEVEL OF ASPIRATION TEST BY ACHIEVEMENT LEVEL

Variable	Group	N	(E)	(U)	X^2	D.F.	P
Shifts after	Highs	44	36	8	16.568	1	.00
success	Lows	42	23	19	.314	1	.64
Pretest	Both	86	59	27	16.882	2	.00
Shifts after	Highs	44	42	2	34.568	1	.00
success	Lows	42	21	21	.000	1	.99
Posttest	Both	86	63	23	34.592	2	.00

TABLE 19

SHIFTS IN LEVEL OF ASPIRATION TEST BY TESTING SEQUENCE

Variable	Group	N	(E)	(U)	X^2	D.F.	P
Shifts after	NR-RW	39	24	15	1.644	1	.19
Success	RW-NR	47	35	12	10.298	1	.00
Pretest	Both	86	59	27	11.942	2	.00
Shifts after	NR-RW	39	27	12	5.026	1	.02
Success	RW-NR	47	36	11	12.255	1	.00
Posttest	Both	86	63	23	17.281	2	.00

subjects increased their Achievement Score. This means that the Low Achievement Group now does not conform to the behavior expected from Low Achievement subjects because they, on the average, have ceased to be Low Achievement subjects. Their behavior now fits the pattern of the High Achievement subjects.

The results analyzing the two sequences of testing (Table 19) indicate that the shifts of the subjects tested with the Nonrewarded Block first do not conform to the expectations as well as those tested with the Reward Block first. However, during posttest the subjects in the Nonreward-Reward sequence behave as expected. It would seem that the candy reward given served as a concrete incentive that, associated with the intrinsic Incentive Value of Success, resulted in a more predictable behavior. Additional evidence for this interpretation comes from the fact that the NR-RW subjects, after experiencing the Rewarded Block last, carried this incentive to their behavior in both Blocks in the posttest, resulting in a general increase in "predictability" for their behavior.

The last analysis carried out is not pure from a statistical point of view, but still it is interesting to note. For each subject a set of predictions was made from the knowledge of his Achievement Score Group. For each subject the total number of Expected (E) and Unexpected (U) tallies were computed, and when more than one-half were E, his behavior was labeled "predictable." The problem with this analysis is that it assumes that all predictions are equally important and independent. Table 20 presents the results of this analysis.

Table 20 shows that in general the predictions generated by the Atkinson Model account for the behavior of the subjects significantly better than random predictions. The Chi-square Test for Independency (Contingency Table) performed with the three factors (Condition, Ethnic Group, and Achievement Level) yield results showing that the predictions from the model are equally good for Experimental and Control Groups, as well as for the two Ethnic Groups. The results for Achievement Level, however, reveal that the model predicts the behavior of High Achievement subjects significantly better than it does for the Low Achievement subjects. (Chi-square = 11.271, D.F. = 1, and P. = .001.)

The last table to be presented contains the distribution of the shots to each Box for all subjects in both pre- and posttest with the corresponding actual

TABLE 20

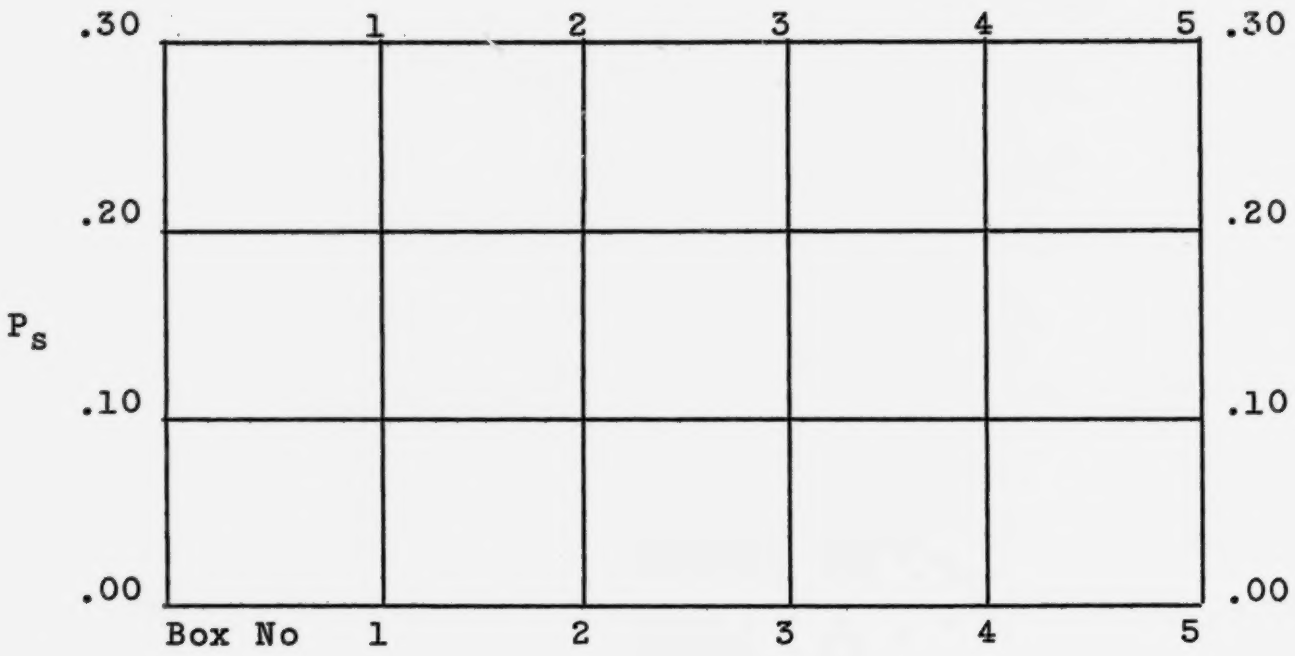
COMBINED PREDICTIONS; "PREDICTABILITY" BY CONDITION, ETHNIC GROUP, AND ACHIEVEMENT LEVEL

Criteria	Group	N	(E)	(U)	X^2	DF	P
By Condition	Experimental	48	38	10	28.000	1	.00
	Control	38	31	7	15.140	1	.00
By Ethnic Group	Negro	46	36	10	13.587	1	.00
	Mexican-American	40	33	7	15.625	1	.00
By Achievement Level	Highs	44	42	2	34.568	1	.00
	Lows	42	27	15	2.881	1	.09

TABLE 21

FREQUENCIES OF CHOICES FOR EACH BOX AND ACTUAL PROBABILITIES OF SUCCESS

Box Number	Unsuccessful	Successful	Total	Percent	Pr.
1	1057	442	1499	43.61	.298
2	506	163	669	19.44	.245
3	419	108	527	15.32	.203
4	305	65	370	10.71	.174
5	322	53	375	10.91	.165
Total	2609	831	3440	99.99	



(All subjects, both blocks, pre and posttest combined) probabilities of success. It can be seen from Table 21 that the actual probabilities of success for each Box were far below the theoretical probabilities of success. The subjects followed, however, the order of probabilities that was explained to them, and their preferences followed the order of difficulty of the boxes, with the exception of Boxes 4 and 5 which were preferred with the same frequency and had no difference in Probability of Success.

3. The Winterbottom Questionnaire (1958)

The information gathered with the Winterbottom Questionnaire provides the total number of Demands and Restrictions for independency that each mother endorsed as goals of her son's training. Furthermore, she indicated her reaction to good performance and failure of her child while he was learning the behaviors involved.

The reactions to good performance and failure were expressed by selecting one of six alternatives varying in degree of rewardiness and punitiveness. To obtain a score on Rewardiness, 3 points were given to the most rewarding alternative, 2 points to the next, and 1 point to the least rewarding. The three neutral alternatives were given a score of zero. The same procedure was followed to arrive at a score on Punitiveness, with a score of 3 points to the most punitive alternative, 2 points to the next, and 1 to the least punitive. Neutral alternatives were scored zero.

The eight scores thus obtained were analyzed with an analysis of variance test with two factors: A = Ethnic Group and B = Achievement Group.

Table 22 presents the cell means for the total number of Demands endorsed by the mothers.

The significant A Main Effect shows that Negro mothers endorsed significantly more Demands than did Mexican-American mothers. The opposite was found for the total number of Restrictions, as Tables 24 and 25 show.

Tables 24 and 25 show that Mexican-American mothers endorsed more Restrictions than did Negro mothers.

Two factors must be kept in mind in interpreting these results: (1) Negro boys were significantly older than Mexican-American boys (Mean difference in months = 5.72, P = .001), a fact that might have been an influence when the mothers evaluated each Demand and Restriction; and (2) although the Spanish translation of the Winterbottom Questionnaire was carefully made by a native

TABLE 22

CELL MEANS FOR THE TOTAL NUMBER OF DEMANDS ENDORSED

Ethnic Group	Achievement Group	
	Highs	Lows
Negro	18.13	17.36
Mexican-Americans	16.19	16.58

TABLE 23

ANALYSIS OF VARIANCE OF TOTAL NUMBER OF DEMANDS

Source	M.S.	D.F.	F-ratio	P
Total	5.269	85		
Between	15.684	3		
A = Ethnic	39.241	1	8.0353	.005
B = Achievement	.757	1	.1549	.697
A X B	7.055	1	1.4446	.231
Within	4.884	82		

TABLE 24

CELL MEANS FOR THE TOTAL NUMBER OF RESTRICTIONS

Ethnic Group	Achievement Group	
	Highs	Lows
Negro	13.91	13.73
Mexican-Americans	17.43	17.84

TABLE 25

ANALYSIS OF VARIANCE OF TOTAL NUMBER OF RESTRICTIONS

Source	M.S.	D.F.	F-Ratio	P
Total	6.474	85		
Between	103.310	3		
A = Ethnic	307.756	1	106.5956	.000
B = Achievement	.274	1	.9500	.757
A X B	1.899	1	.6576	.574
Within	2.887	82		

Spanish-speaking person who was trained in psychology and had experience in interviewing, it is not completely clear that the meanings of the items were exactly the same in both forms. This is particularly important since all the significant results we have obtained are for Ethnic Group rather than for Achievement Level.

The next table to be presented summarizes the results of the comparison of the ages at which the mothers of the two Ethnic Groups expect each Demand to be mastered.

Tables 26 and 27 reveal clear trends. In general, Negro mothers expect their sons to master the Demands they have endorsed at an earlier age than do mothers of Mexican-American boys. This trend is reversed when Restrictions are involved. There, Mexican-American mothers expect their sons to learn not to do certain behaviors at an earlier age than do Negro mothers.

The analysis of the reactions to good performance and failure to learn a Demand by the children as reported by their mothers is presented in Table 28. The same analysis is presented for reactions to training in Restrictions on Table 29. Tables 28 and 29 record the group that scored highest and the corresponding significance

TABLE 26

MEAN AGE (IN YEARS) AT WHICH EACH DEMAND IS EXPECTED TO BE MASTERED AS REPORTED BY NEGRO AND MEXICAN-AMERICAN MOTHERS

Demand Number	Negro (Mean Age in Years)		Mexican-American (Mean Age in Years)	P
1	5.88	<	6.82	.07
2	5.29	<	7.32	.00
3	4.33	<	7.32	.00
4	5.48	<	6.29	.07
5	5.68	<	6.74	.03
6	5.62	<	6.74	.00
7	6.14	=	6.25	n.s.
8	6.46	=	7.22	n.s.
9	4.85	<	5.67	.04
10	7.53	=	7.04	n.s.
11	5.47	=	5.99	n.s.
12	5.08	<	5.93	.00
13	6.42	=	6.27	n.s.
14	5.00	<	5.67	.00
15	5.86	<	6.28	n.s.
16	9.01	<	9.90	.00
17	5.42	<	6.64	.00
18	8.23	<	9.91	.00
19	9.19	<	10.60	.10
20	7.05	<	9.04	.00

TABLE 27

AGE (IN YEARS) AT WHICH EACH RESTRICTION IS EXPECTED, AS REPORTED BY NEGRO AND MEXICAN-AMERICAN MOTHERS

Restriction	Negro (Mean Age in Years)		Mexican-American (Mean Age in Years)	P
1	6.29	>	5.65	.15
2	5.01	<	5.46	.05
3	4.80	<	5.66	.01
4	5.13	<	6.36	.00
5	5.11	<	6.58	.08
6	6.06	=	6.00	n.s.
7	5.18	<	5.90	.00
8	5.92	=	6.41	n.s.
9	4.86	<	5.57	.02
10	5.80	=	5.91	n.s.
11	5.38	=	6.32	n.s.
12	5.55	<	6.00	.09
13	6.28	=	6.46	n.s.
14	5.05	<	5.91	.00
15	7.11	=	6.36	n.s.
16	7.80	<	11.73	.00
17	4.63	<	5.39	.04
18	4.53	<	5.91	.00
19	*		*	
20	*		*	

*Insufficient data to compute analysis of variance. (Very few Mothers endorsed them.)

TABLE 28

ANALYSIS OF VARIANCE OF REACTIONS TO SUCCESS AND FAILURE TO LEARN A DEMAND

Demand	Most Rewarding	P	Most Punitive	P
1	Mexican-American	.06	Highs	.09
2	Highs	.09	Mexican-American	.01
3	Mexican-American	.00	Negro	n.s.
4	Mexican-American	.08	Mexican-American	.06
5	Mexican-American	.00	Mexican-American	n.s.
6	Mexican-American	.09	Mexican-American	.10
7	Mexican-American	.07	Mexican-American	n.s.
8	Mexican-American	n.s.	Mexican-American	.15
9	Mexican-American	.01	Mexican-American	.00
10	Mexican-American	.06	Mexican-American	.02
11	Mexican-American	.01	Mexican-American	.09
12	Mexican-American	n.s.	Negro	.00
13	Mexican-American	n.s.	Mexican-American	.11
14	Lows	.06	Mexican-American	n.s.
15	Mexican-American	.01	Mexican-American	.14
16	Mexican-American	.05	Mexican-American	.13
17	Mexican-American	n.s.	Negro	.00
18	Mexican-American	.00	Mexican-American	.06
19	Mexican-American	.01	Mexican-American	n.s.
20	Mexican-American	n.s.	Mexican-American	n.s.

TABLE 29

ANALYSIS OF VARIANCE OF REACTIONS TO SUCCESS AND FAILURE TO LEARN A RESTRICTION

Restriction	Most Rewarding	P	Most Punitive	P
1	Mexican-American	.00	Negro	n.s.
2	Mexican-American	.00	Negro	.000
3	Mexican-American	.00	Negro	.005
4	Mexican-American	.00	Negro	.009
5	Mexican-American	.00	Negro	n.s.
6	Mexican-American	.00	Negro	n.s.
7	Mexican-American	.00	Negro	.000
8	Mexican-American	.00	Negro	n.s.
9	Mexican-American	.03	Negro	.001
10	Mexican-American	.00	Negro	n.s.
11	Mexican-American	n.s.	Negro	.05
12	Mexican-American	.02	Negro	.000
13	Mexican-American	n.s.	Mexican-American	.09
14	Mexican-American	.00	Negro	.000
15	Mexican-American	n.s.	Mexican-American	.05
16	Mexican-American	.00	Negro	.16
17	Mexican-American	.00	Mexican-American	n.s.
18	Mexican-American	.00	Negro	.000
19	*		*	
20	*		*	

*Insufficient data to compute analysis of variance (very few Mothers endorsed those Restrictions).

level. The first column lists the results for reactions to Success (Rewardiness), while the second records the results for reactions to Failure (Punitiveness).

Table 28 presents a clear trend. While training their boys on the Demands endorsed, the mothers of Mexican-American boys tend to be more rewarding on the average than do mothers of Negro boys. At the same time, they are more punitive on the average to failures in the learning of the Demand involved.

Table 29, however, presents a different picture. When Restrictions for independence are the concern, Mexican-American mothers again are more rewarding than are Negro mothers, but now Negro mothers are more punitive than Mexican-American mothers.

The interpretation of the results, taking into account the possible effect that the translation of the interview could have had, indicates a trend that is consistent for almost every Demand and Restriction; Mexican-American mothers are more rewarding to success in learning both Demands and Restrictions. The reactions to unsatisfactory performance in learning a behavior seem to depend on the type of behavior involved. Mexican-American mothers are more punitive to a failure to learn a Demand, but

Negro mothers are more punitive when a Restriction, that is, the suppression of a behavior, is the concern.

It would seem that mothers of different ethnic backgrounds and cultures interpret the importance of these behaviors in different ways. Negro mothers seem to attach more importance to failing to avoid certain behaviors considered negative, while Mexican-American mothers give more importance to failing in the acquisition of determined behaviors.

It seems clear that differences between the Achievement Groups were not found as it was expected from the original Winterbottom results. The results obtained by Winterbottom, however, are not perfectly clear, since she selected arbitrarily age eight at which to call Demands before that age "early Demands," the only category that was significantly different for children of different Achievement Levels. At the same time, she selected for her comparisons the two extreme quartiles of the distribution of Achievement scores.

4. The Observer's Rating Form

This instrument was used as a check on the experimental manipulation. Two raters, blind to the conditions in which the teachers were participating and with only general information as to the purpose of the study, made the observation of the teachers in New Braunfels and Galveston, Texas.

Scale I, Restrictive classroom behavior, was intended to measure the degree to which the teachers attempted to restrict expressions of independence, initiative, etc. The behaviors rated are very close to those presented in the list of Restrictions for Independency and Mastery of the Winterbottom Questionnaire.

Scale II, Achievement-promoting behavior, is formed by items that refer to those behaviors described to the teachers as achievement-related and that were to be reinforced.

The analysis of variance results for both Scale I and Scale II are reported in Table 30.

Analysis of variance showed significant differences between the four groups for Scale I, but further analysis demonstrated that the difference is between cities. When the ratings for teachers in the Experimental Condition are combined, they are not significantly different from the rating of the control teachers.

TABLE 30

SCALES I AND II MEANS FOR GROUPS BY CITY AND CONDITION

Group	N	Scale I Mean	Scale II Mean
Experimental Galveston	7	15.00	56.43
Control Galveston	4	15.25	58.25
Experimental New Braunfels	5	22.20	75.40
Control New Braunfels	5	20.80	64.80
Experimental Both cities	12	18.00	64.33
Control Both cities	9	18.33	61.89

It seems clear that the behavior of the teachers in the Experimental Condition did not differ from that of the teachers in the Control Condition. This could explain the failure to find a Main Effect for Condition in the analysis of the data from the Aronson Test.

It is important to note that a significant difference between the behavior of teachers in the Experimental and Control Conditions probably would not have had any testable effect on the children's behavior. The reason for this is our failure to give the behavior of the teacher's aides the importance that it has. The aides spent the same or even more time with the children as did the teachers, and from the present theory their behavior should have had an important impact on any behavioral or motivational change that might occur in the children.

The partially positive results that we have obtained advise a more careful selection and training of the aides in order to maximize the positive effect that their actions and reactions have on the children.

PART V

SUMMARY AND CONCLUSIONS

The results obtained with two independent instruments demonstrate that the Head Start experience can be given credit for a significant gain in the Achievement Motive of our subjects.

For the reasons explained in detail elsewhere, we failed to demonstrate that the amount and type of reinforcement received by the children is the variable responsible for the increase in Achievement Motive. It is safe, however, to conclude that the total experience of the Head Start Program was responsible for the changes measured. The background information we have about the types of reinforcement practices of lower-class parents and their differences with the practices used in the Head Start classes permit us to conclude that indeed the type of reinforcement is associated with the development of the Achievement Motive.

The evidence gathered with the Aronson Test supports the notion that what changed in our subjects was the Motive to Avoid Failure, even though this Motive has been traditionally measured with an independent instrument.

The Level of Aspiration Test developed by the author seems to be a useful instrument. The low actual probabilities of success of the five boxes can be easily adjusted by varying the distance from which the subjects throw the marbles. The material rewards can be also changed or eliminated at will.

The results of the analyses of the Winterbottom Questionnaire data reveal differences between the two ethnic groups but no consistent differences that can be accounted for by the level of the Achievement Motive.

It seems appropriate to conclude by saying that we have demonstrated the positive effects of Head Start on the development of the Achievement Motive in children from culturally deprived groups.

The obvious recommendation that follows from these findings is that it is extremely important to give more importance to the training programs for the aides and volunteer workers that are involved with Head Start. An intensive one-week workshop to analyze and clarify the nature of reinforcement and its effects on the children would improve greatly the effectiveness of Head Start in dealing with this very subtle but nonetheless vital area of behavior.

APPENDIX 1

WINTERBOTTOM'S QUESTIONNAIRE

Winterbottom's Questionnaire

Introduction and Instructions

Good morning/afternoon Mrs. __________, my name is ___________. Head Start and the University of Texas are working together in this school interviewing the parents in order to find out the best way for Head Start to be more effective and useful to your child.

As you know, mothers differ in the things they teach their sons and the way they choose to teach them. It is not that one way is better than the other, but that they are different. In order that your son may take advantages of this summer program we need to know something about the things you have already taught him and what you plan to teach him in the future.

I'm going to name some things you may or may not want to teach him. If you think that each of them are important and necessary, I want you to say so and also the age you think he should have already learned them. Some of these things your son may know already and some of them he will learn soon.

For example, do you plan to teach your son to be able to ride a bus along (by himself). If you think he should, when (what age) do you think he should be able to do so?

As you can see, we are interested to know what things you think your son should be able to do and at which age he should do so.

Now, when you are trying to teach him something and he does what you want him to do, there are several reactions or things you could do. For example, you could:

A. Kiss or hug him to show how pleased you are.
B. Tell him what a good boy he is. Praise him for being good.
C. Give him a special treat or privilege.
D. Do nothing at all to make it seem special.
E. Show him you expected it of him.
F. Show him how he could have done better.

These are examples of what a mother can do when her son is doing well. To each question I want you to tell me with your own words, if you want, what do you generally do or say to him.

Now, for example, say you are trying to teach him to eat with fork and knife and he doesn't do it right, there are several ways to show him he did not do it well. For example, you could:

A. Scold or spank him for not doing it.
B. Show him you are disappointed in him.
C. Deprive him of something he likes or expects, like a special treat or privilege.
D. Don't show any feeling about it.
E. Point out how he should have behaved.
F. Just wait until he does what you want.

Is it clear then? I will name several things that you might plan to teach him. If you think he should learn each of them, I want you to tell me at what age you think he should learn it. Furthermore, I want you to tell me what do you generally do when he does it right and what do you generally do when he doesn't do it right. Why don't we start then?.........

DEMANDS

1. To stand up for his own rights with other children.
2. To know his way around his part of the city so that he can play where he wants without getting lost.
3. To go outside to play when he wants to be noisy or boisterous.
4. To be willing to try new things on his own without depending on his mother for help.
5. To be active and energetic in climbing, jumping, and sports.
6. To show pride in his own ability to do things well.
7. To take part in his parents' interests and conversations.
8. To try hard things for himself without asking for help.
9. To be able to eat alone without help in cutting and handling food.
10. To be able to lead other children and assert himself in children's groups.
11. To make his own friends among children his own age.
12. To hang up his own clothes and look after his own possessions.
13. To do well in school on his own.
14. To be able to undress and go to bed by himself.
15. To have interests and hobbies of his own. To be able to entertain himself.
16. To earn his own spending money.
17. To do some regular tasks around the house.
18. To be able to stay alone at home during the day.
19. To make decisions like choosing his clothes or deciding how to spend his money by himself.
20. To do well in competition with other children. To try hard to come out on top in games and sports.

RESTRICTIONS

1. Not to fight with children to get his own way.
2. Not to play away from home without telling his parents where he is.
3. Not to be noisy and boisterous in the house.
4. To be cautious in trying new things on his own when his parents aren't around.
5. Not to run and jump a lot.
6. Not to try to be the center of attention. Not to boast or brag.
7. To be respectful and not interfere with adults.
8. Not to try to do things himself that others can do better.
9. Not to be sloppy at the table or eat with his fingers.
10. Not to boss other children.
11. Not to play with children he doesn't know or of whom his parents don't approve.
12. Not to leave his clothes lying around or his room untidy.
13. Not to fail at school work.
14. Not to stay out after dark.
15. Not to depend on his mother for suggestions of what to do.
16. Not to earn money or take a job without his parent's consent.
17. Not to whine or cry when his mother leaves him alone.
18. Not to try to do things around the house where he will be in the way.
19. Not to make important decisions like choosing his clothes or deciding how to spend his money without asking his parents.
20. Not to try to beat other children in play.

APPENDIX 2

WINTERBOTTOM'S QUESTIONNAIRE

(Spanish Translation by
Renato Espinosa, 1967)

Winterbottom's Questionnaire.

Muy buenos dias/tardes, señora. Mi nombre es_________________. Head Start y la Universidad de Texas estan trabajando juntos en esta escuela entrevistando a las madres de los ninos para buscar la manera de mejorar este programa.

Como Ud sabe, no todas las madres enseñan a sus hijos las mismas cosas de la misma manera. No es que una forma sea mejor que la otra pero si son distintas. Para que su hijo (a) pueda aprovechar mejor este verano en la escuela necesitamos saber algo acerca de las cosas que Ud le ha enseñado o le enseñará en el futuro.

Yo le voy a nombrar algunas cosas que tal vez Ud cree necesario enseñarle a su hijo (a). Si Ud cree que son importantes o necesarias quiero que me lo indique, así como tambien la edad en que Ud piensa que su hijo (a) ya debería haberlo aprendido. Algunas de las cosas que voy a nombrarle tal vez su hijo (a) ya las sepa y otras las aprenderá en el futuro.

Por Ejemplo: ¿Piensa Ud enseñarle a su hijo (a) a andar solo en bus?
¿Cree Ud que su hijo debería aprender a andar solo en bus?
Si Ud cree que el debería, A qué edad piensa enseñarle eso, o ¿A qué edad cree Ud que ya debería haberlo aprendido?

Como Ud ve, lo que nos interesa saber es qué cosas cree Ud que su hijo debería saber y a qué edad debería aprenderlo.

Ahora bien. Cuando Ud esta tratando de enseñarle algo y él lo hace bien, hay muchas cosas que Ud podría hacer para mostrarle que está aprendiendo.

Por ejemplo, Ud podría:

A. Besarlo y abrazarlo para demostrarle que Ud esta contenta con él porque hizo lo que Ud le pedía,
B. Decirle que es un niño muy bueno.
C. Darle algun premio como dulces, dinero etc o dejarlo salir a jugar o mirar TV.

D. No hacer nada que lo haga pensar que lo que hizo es algo especial No darle mayor importancia.
E. Demostrarle que Ud sabía que el podía hacerlo (lo que Ud le pedía).
F. Mostrarle como podría hacerlo mejor de lo que lo hizo.

Estos son ejemplos de la que una madre puede hacer cuando su hijo esta aprendiendo bien lo que le enseñen. A cada una de las preguntas que le haré, quiero que Ud me diga con sus palabras que es lo que Ud generalmente hace, o como Ud le responde.

Cuando por ejemplo Ud le está enseñando a comer con el tenedor y la cuchara y él no le hace caso, hay muchas maneras de mostrarle que lo que hizo esta mal. Por ejemplo, Ud podría:

A. Reprenderlo o pegarle (golpearlo) por no obedecer o no hacer lo que Ud le pide.
B. Demostrarle que Ud esta desilusionada, molesta o enojada.
C. Priverlo de algo que a el le gusta, como fruta, el postre, no dejarlo salir a jugar con los amigos etc.
D. no decirle nada.
E. Mostrarle qué es lo que Ud quería que él hiciera para que lo sepa para otra vez.
F. No hacer nada y esperar que el sólo lo haga.

¿Está claro entonces? Yo voy a nombrarle una serie de cosas que pueden enseñarse. Si Ud cree que su hijo debería aprender eso quiero que me diga a qué edad cree Ud que él ya debería saberlo. Ademas, quiero que Ud me diga qué hace Ud cuando él le obedece (lo hace bien) y que hace Ud cuando el no le obedece.
hace bien) ¿Empezamos entonces?

DEMANDAS

1. Hacer respetar sus derechos con otros niños. Ej. no dejar que lo manden otros niños, no dejar que le quiten sus cosas.
2. Conocer el vecindario y los alrededores para que pueda jugar sin perderse.
3. Salir a jugar fuera de la casa cuando quiere ser bullicioso (hacer ruido.)
4. Tratar de hacer ciertas cosas que él no sabe hacer sin tener que pedir ayuda (a Ud o a otros)
5. Ser activo y bueno para los deportes, saltar y trepar.
6. Demostrar su orgullo por las cosas que él puede y sabe hacer bien.
7. Tomar parte en las pláticas e intereses de los grandes (adultos)
8. Hacer sus cosas lo mejor posible sin tener que pedir ayuda.
9. Ser capaz de comer sólo con tenedor y cuchillo, sin ayuda.
10. Ser capaz de mandar a otros niños y hacerse respetar en un grupo.
11. Elegir solo sus amigos hacerse amigo de otros niños de su misma edad.
12. Guardar y/o colgar su ropa y cuidar de sus cosas (juguetes etc)
13. Estudiar y sacar buenos grados en la escuela sin que Ud tenga que decirle.
14. Saber desvestirse y acostarse sin ayuda.
15. Tener sus entretenciones propias; ser capaz de jugar y entretenerse en cosas que él decida.
16. Ganar su propio dinero para sus gastos personales (dulces etc).
17. Hacer ciertas tareas en la casa regularmente (hacer su cama, ordenar su cuarto etc).
18. Ser capaz de quedarse solo en la casa durante el día.
19. Tomar decisiones por su cuenta tal como elegir su ropa, y decidir cómo y en qué gastar su propio dinero.
20. Tener éxito en competencias con otros niños; tratar de ser el mejor en juegos y deportes.

RESTRICCIONES

1. No pelear con otros niños para imponer su voluntad.
2. No irse a jugar lejos de la casa sin antes decirle a Ud dónde estaré.
3. No ser ruidoso y alborotador en la casa.
4. Tener cuidado al intentar hacer cosas que no sabe cuando sus padres no estan cerca. (Ej. prender la estufa, el TV etc.)
5. No correr ni saltar demasiado.
6. No tratar de llamar la atención de los grandes corriendo, saltando o gritando.
7. Ser respetuoso y no molestar a la gente grande.
8. No tratar de hacer cosas el solo que otros en la casa pueden hacer mejor.
9. No ser torpe, descuidado ni comer con los dedos en la mesa.
10. No mandonear a otros niños.
11. No jugar con niños que no conoce o que Ud desaprueba. (que a Ud no le gustan.)
12. No dejar su ropa botada en el cuarto o el cuarto desordenado.
13. No fracasar en la escuela. No hacer mal sus tareas o trabajos en la escuela.
14. No quedarse fuera de la casa despues que oscurece (tarde)
15. No depender de Ud para que le diga lo que tiene que hacer, con qué y dónde jugar etc.
16. No ganar dinero o trabajar sin el consentimiento o sin pedirle permiso a Ud antes.
17. No ponerse a hacer cosas en la casa donde vaya a molestarle a Ud o a los grandes.
18. No llorar o enojarse cuando Ud lo deja solo.
19. No tomar decisiones importantes tales como elegir su ropa o decidir como gastar el dinero sin antes preguntarle a Ud.
20. No tratar de ganarle siempre a otros niños en los juegos o deportes.

APPENDIX 3

OBSERVER'S RATING FORM

ORF SUPPLEMENTARY SHEET

Date:______________________Time of observation:__________to________

Time of class:______________to________

Observer's name:________________Co-observer's name:_____________

School district or organization:_______________________________

Town:________________________Building:______________________

Teacher's name:______________________Code number:__________

Teacher's educational level:__________________________________

Teacher's past experience:___________________________________

Teacher aides: Present____Absent____ Volunteers: Present____Absent_____
Work week (in days)_________ Work week (in days)_________

Student assistants: Present____Absent____ Work week (per person)______

Type of Class:____

Others present:____ Specify:__________________________________

Pupils present: Boys____Girls____ Pupils enrolled: Boys____Girls_____

Age range of pupils:____to____ Age of majority of pupils:____________

Ethnic composition of class (nos.): Latin-American____ Negro____
Anglo____ Other____

Apparent ethnic origin of teacher:_____________________________

Neighborhood in which school is located:_________________________

____

Physical appearance of room and its contents:_____________________

____

Impressions gained from teacher interview: (Assure teacher of confidentiality of interview)

III. Items Related to the Child's Social Interactions

1. To what extent does the teacher attempt to inculcate in the child respect for the ideas of others?

    1. Almost constant attempts to do so.
    2. Very frequent attempts to do so.
    3. Many attempts to do so.
    4. Some attempts to do so.
    5. Few attempts to do so.
    6. Rare attempts to do so.
    7. No attempts to do so.

2. To what extent does the teacher attempt to inculcate in the child respect for the property of others?

    1. Almost constant attempts to do so.
    2. Very frequent attempts to do so.
    3. Many attempts to do so.
    4. Some attempts to do so.
    5. Few attempts to do so.
    6. Rare attempts to do so.
    7. No attempts to do so.

3. To what extent does the teacher attempt to inculcate in the child respect for the feelings of others?

    1. Almost constant attempts to do so.
    2. Very frequent attempts to do so.
    3. Many attempts to do so.
    4. Some attempts to do so.
    5. Few attempts to do so.
    6. Rare attempts to do so.
    7. No attempts to do so.

4. To what extent does the teacher encourage the pupils to use an adult (in this case the teacher or parent) as a resource person?

    1. Almost constant attempts to do so.
    2. Very frequent attempts to do so.
    3. Many attempts to do so.
    4. Some attempts to do so.
    5. Few attempts to do so.
    6. Rare attempts to do so.
    7. No attempts to do so.

5. Degree to which the teacher makes specific attempts to develop more realistic concepts (concepts that will be more congruent with those found in the huge majority of American schools and homes) of the roles of male and female in the family. (For Negro children this may be an attempt to off-set the deprecations of maleness to which the children have been exposed; for Latin-Americans this may be an attempt to off-set the effects of extreme male domination to which they may have been exposed.)

    1. Almost constant attempts to do so.
    2. Very frequent attempts to do so.
    3. Many attempts to do so.
    4. Some attempts to do so.
    5. Few attempts to do so.
    6. Rare attempts to do so.
    7. No attempts to do so.

IV. Items Related to the Child's Emotional Development

6. To what extent does the teacher indicate her identification with the group which she teaches? (Choice of words, emphasis on certain values, ways of referring to other social groups or to the children's social group.)

    1. Almost constant identification.
    2. Very frequent instances of identification.
    3. Frequent instances of identification.
    4. Moderate identification.
    5. Some identification.
    6. Slight identification.
    7. No identification.

7. Degree to which the teacher seems to be aware of pupil frustration.

    1. Almost constant indications of awareness.
    2. Very much aware.
    3. Much awareness.
    4. Moderate awareness.
    5. Some awareness.
    6. Slight awareness.
    7. No apparent awareness.

8. Extent to which the teacher seems to have specific techniques for coping with individual pupil's frustrations.

    1. More than five techniques used.
    2. Five techniques used.
    3. Four techniques used.
    4. Three techniques used.
    5. Two techniques used.
    6. One technique used with all situations.
    7. No apparent technique.

    Possible Techniques:
    - a. Changing tasks for pupil
    - b. Turning to physical activity
    - c. Encouraging child to continue
    - d. "We all feel that way sometime, I do too, but... etc."

9. Extent to which the teacher attempts to help the child develop self discipline.

    1. Almost constant attention given to this.
    2. A great deal of attention given to this
    3. Much attention given to this.
    4. Moderate attention given to this.
    5. Little attention given to this.
    6. Very slight attention given to this.
    7. No attention given to this.

10. Extent to which the teacher attempts to inculcate in the child acceptance of personal responsibility vs. placing of blame on others.

    1. Almost constant attention given to this.
    2. A great deal of attention given to this.
    3. Much attention given to this.
    4. Moderate attention given to this.
    5. Little attention given to this.
    6. Very slight attention given to this.
    7. No attention given to this.

11. Extent to which the teacher responds to the consequences of an act vs. responding to the child's intent.
    (Kohn, 1959 reported that working class parents focus on the act itself, middle class parents on the child's intent.)

1. Always focuses on the act itself.
2. Usually focuses on the act itself.
3. Focuses on the act more often than on intent.
4. Focuses on act and intent about equally.
5. Focuses on intent more than on act.
6. Usually focuses on intent.
7. Always focuses on intent.

12. Extent to which the teacher indicates to the child verbally that "the school cares."
(Krugman, 1961, reported programs for culturally deprived in New York produced changed self-concepts by giving children "the feeling that the school cared and by having the children succeed.")
(Of course, there are many ways, non-verbal, of showing this; these are picked up in other items.)

    1. Almost constant attention given to this.
    2. A great deal of attention given to this.
    3. Much attention given to this.
    4. Moderate attention given to this.
    5. Little attention given to this.
    6. Very slight attention given to this.
    7. No attention given to this.

13. Extent to which the teacher uses specific references or techniques to combat the negative self-image often found among culturally disadvantage children, especially Negro children.

    1. Almost constant attempts to do so.
    2. Very frequent attempts to do so.
    3. Many attempts to do so.
    4. Some attempts to do so.
    5. Few attempts to do so.
    6. Rare attempts to do so.
    7. No attempts to do so.

14. Extent to which the teacher indicates respect for the children's families. (Use of words, phrases, references, tone of voice, inflections.)

    1. Complete and sincere respect.
    2. Very much respect.
    3. Much respect.
    4. Moderate respect.
    5. Some respect.
    6. Slight respect.
    7. Little or no respect (they are "those people").

15. Extent to which teacher seems to have specific techniques for handling emotional problems of children.

    1. More than five techniques used.
    2. Five techniques used.
    3. Four techniques used.
    4. Three techniques used.
    5. Two techniques used.
    6. One technique used with all situations.
    7. No apparent technique.

    Possible techniques:

    a. Changing tasks for pupils.
    b. Turning to physical activity.
    c. Encouraging child to continue.
    d. "We all feel that way sometimes, I do, but...etc."

16. To what extent is there physical contact between teacher and children? (Putting arm around child, "huggin him up," hands on shoulder or arm, etc.)

    1. Almost constant contact.
    2. Very frequent contact.
    3. Frequent contact.
    4. Some contact.
    5. Little contact.
    6. Very little contact.
    7. Practically no contact or none.

V. Items Related to the Motivation of the Child

17. Degree to which the teacher uses specific techniques to develop an enthusiasm for learning. (For seeking new knowledge, for feeling a sense of satisfaction form learning, etc.)

    1. Almost constant attention paid to this.
    2. A great deal of attention given to this.
    3. Much attention given to this.
    4. Moderate attention given to this.
    5. Little attention given to this.
    6. Very slight attention given to this.
    7. To attention given to this.

18. Degree to which the teacher attempts to develop in the children acceptance of and familiarity with delayed goal and gratification. (Future-time orientation)

    1. Almost constant attention paid to this.
    2. A great deal of attention given to this.
    3. Much attention given to this.
    4. Moderate attention given to this.
    5. Little attention given to this.
    6. Very slight attention given to this.
    7. No attention given to this.

19. Degree to which the teacher creates an atmosphere of "possibility" to replace the attitude of passivity and defeatism which is common among children from impoverished areas.

    1. Almost constant attention paid to this.
    2. A great deal of attention given to this.
    3. Much attention is given to this.
    4. Moderate attention given to this.
    5. Little attention given to this.
    6. Very slight attention given to this.
    7. No attention given to this.

20. Degree to which the teacher creates an atmosphere or attitude of self-dependency rather than an atmosphere or attitude of "other-dependency." (Verbal expressions, conversations, encouragement of self-dependency, attempts to combat attitude that "someone" will take care of all the children's needs.)

    1. Almost constant attention paid to this.
    2. A great deal of attention given to this.
    3. Much attention given to this.
    4. Moderate attention given to this.
    5. Little attention given to this.
    6. Very slight attention given to this.
    7. No attention given to this.

21. Extent to which the teacher uses material vs. non-material rewards for pupil responses or behavior. (Several studies have shown there is a difference in the use of such rewards according to social class.)

1. Uses material rewards only (Stars, first in line for milk, etc., a prize).
2. Uses material rewards most of time.
3. Uses material rewards more than non-material rewards.
4. Uses both about equally.
5. Uses non-material rewards more than material rewards.
6. Uses non-material rewards most of time.
7. Uses non-material rewards only (Praise, a smile, a comment).

22. Degree to which the teacher uses negative vs. positive reinforcement in learning situations. (Use of "no, that's wrong, now - you missed that yesterday, etc., vs. good, that's a good try, keep on, you're doing fine, etc.")

    1. Very frequent positive reinforcement.
    2. Frequent positive reinforcement.
    3. More positive than negative reinforcement.
    4. The two used about equally.
    5. More negative than positive reinforcement.
    6. Frequent negative reinforcement.
    7. Very frequent negative reinforcement.

23. Degree to which the teacher uses negative vs. positive reinforcement in behavior situations.

    1. Very frequent positive reinforcement.
    2. Frequent positive reinforcement.
    3. More positive than negative reinforcement.
    4. The two used about equally.
    5. More negative than positive reinforcement.
    6. Frequent negative reinforcement.
    7. Very frequent negative reinforcement.

24. Degree to which the teacher displays tolerance for deviant behavior.

    1. Extremely tolerant.
    2. Much tolerance.
    3. Tolerant.
    4. Moderate tolerance.
    5. Some tolerance.
    6. Slight tolerance.
    7. Little or no tolerance.

25. Extent to which the teacher uses unplanned incidents as an opportunity for learning vs. consistent focusing on the planned task at hand.

    1. Almost constant attempts to do so.
    2. Very frequent attempts to do so.
    3. Many attempts to do so.
    4. Some attempts to do so.
    5. Few attempts to do so.
    6. Rare attempts to do so.
    7. No attempts to do so.

26. What type of punishment does this teacher use for behavior problems?

    1. Physical punishment.
    2. Isolation within classroom.
    3. Isolation outside of classroom.
    4. "Scolding," warning, threatening.
    5. Group pressure.
    6. Loss of privilege.
    7. "Talking to the child" (reasoning).
    8. Calling in other adults.
    9. Diverting child to a new activity.

27. Extent to which the teacher seeks to develop a "questioning orientation" on part of the child. (By use of herself as a model, by helping the child learn how to frame questions, by emphasizing questioning attitudes, etc.

    1. Almost constant attention paid to this.
    2. A great deal of attention given to this.
    3. Much attention given to this.
    4. Moderate attention is given to this.
    5. Little attention is given to this.
    6. Very slight attention is given to this.
    7. No attention is given to this.

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